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This study investigated the predictive validity of the Teacher Performance Assessment Instruments (TPAI) using pupil gains on teacher-made tests (TMT) as a criterion. The TPAI and the TMT's were administered to 56 elementary and secondary classrooms in Georgia. Results supported the validity of the TPAI with a large number of correlations ranging from .30 to .45. Regression analysis suggested that 25 per cent of pupil learning gain variance was correlative with the successful implementation of classroom procedures and practices. Implications of the methodology for teacher effectiveness research are discussed. (Author)

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# Teacher Performance and Pupil Achievement On Teacher-Made Tests

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# Teacher Performance and Pupil Achievement on Teacher-Made Tests

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## ABSTRACT

This study investigated the predictive validity of the Teacher Performance Assessment Instruments (TPAI) using pupil gains on teacher-made tests (TMT) as a criterion. The TPAI and TMT's were administered to 56 elementary and secondary classrooms in Georgia. Results supported the validity of the TPAI with a large number of correlations ranging from .30 to .45. Regression analyses suggested that 25% of pupil learning gain variance was in common with the successful implementation of classroom procedures and practices. Implications of the methodology used for the teacher effectiveness research paradigm are discussed.

A majority of teacher effectiveness and process-product research studies have had as a major focus attempts to establish relationships between teacher performance and pupil learning. Most of these studies have used standardized achievement test gain scores as an index of pupil learning. These studies have resulted in somewhat mixed and/or ambiguous results at best, though some generalities about desirable and "effective" teacher behaviors have been derived from meta-analyses of teacher effects (Medley, 1977; Gage, 1978).

Studies using standardized achievement tests as a pupil learning index suffer from several conceptual and empirical flaws. Among these are: 1) much of pupil achievement on standardized measures is brought about by (or in common with) non-teaching variables such as the educational "quality" of the home environment, pupil socioeconomic class, pupil ability or aptitude, perceptions of the social environment of learning, and pretest achievement, thus reducing the amount of "gain" score variation which can be attributed (related) to teacher behavior; 2) the content of standardized tests usually has only minimal overlap with the varieties and content of classroom instruction during the course of the school year; and 3) teachers in process-product research are not often assessed behaviorally while directly involved in teaching instructional units having content that matches the content of standardized achievement tests. This last consideration is an important one since correlating teacher behaviors with generalized measures of pupil learning yields little information of a prescriptive sort.

Empirically, teacher effectiveness studies have suffered from violating the assumptions of and misapplying indices of pupil learning gain. An excellent review of issues and difficulties with a variety of pre and post

test change scores can be found in Linn and Slinde (1976). Similarly, the rather low reliability of many measures of teacher behavior and performance characteristics sets lower limits on establishing relationships with pupil learning outcomes. A recent review of the reliability of a variety of measures of teaching behavior can be found in Shavelson and Dempsey (1976).

Given the difficulties in past research methodology and findings in process-product studies, it was of interest in this study to examine relations between teacher performance and pupil learning gains using teacher-made tests derived from instructional unit objectives over relatively short periods of instruction. The study was designed to investigate the predictive validity of a set of instruments developed to measure minimally essential, but generic teaching competencies. These instruments are to be used during the 1980-1981 school year as the basis for granting initial professional certification to all beginning teachers in Georgia. A secondary purpose of the study was to examine the manner in which categories of teaching performance correspond to the production of pupil learning over relatively short units of instruction.

## Methods and Procedures

### Sample

The sample for this study consisted of 56 first-year teachers and approximately 1,400 pupils in their classes (grades K-12). The teachers and classrooms were derived from two large Cooperative Educational Service Agency areas: one in the west central part of the state and the other in the southern part of the state.

### Instrumentation

Teacher Performance Assessment Instruments: All teachers were administered the 1978-1979 version of the Teacher Performance Assessment Instruments

(TPAI) (Capie, Okey, and Johnson, 1978) developed through the Teacher Assessment Project (TAP) at the University of Georgia. The TPAI consist of separate instruments for assessing performance competencies in Teaching Plans and Materials (TPM), Classroom Procedures (CP), Interpersonal Skills (IS), Professional Standards (PS), and Student Perceptions (SP). Only the TPM, CP, and IS instruments were used in this study. The TPAI were administered by three trained data sources: a data collector external to the school, a colleague or peer teacher (nominated by the teacher being assessed), and a school administrator (usually the school principal).

The TPAI used in this study measure teacher performance on 16 generic competencies and their associated performance indicators. Each indicator is rated by each of three data sources on a one to five-point descriptor scale representing increasing degrees of performance proficiency.

The TPM instrument focuses on teaching skills which relate to preparation for instruction. The teacher being assessed is asked to prepare a portfolio for an instructional unit. After studying the portfolio and interviewing the teacher, trained data collectors rate instrument items relative to planning, selecting objectives, and choosing materials and equipment.

The CP instrument focuses on actual classroom practices. Data collectors use this instrument to identify teaching practices in an ongoing classroom setting. Thus, direct classroom observation becomes the major source of assessment data. The testing skills which form the basis for this instrument center on teaching methods and techniques.

The IS instrument describes the teacher's proficiency in creating a comfortable social atmosphere, demonstrating warmth and friendliness, and managing classroom interactions. Scores on this instrument are also based

on direct observations of the teacher's performance during classroom instruction.

An example of how statements of teaching skills, indicators and descriptors combine to determine the quality of observed teacher performance can be seen by examining competency VII. "Communicates with learners." One of the five indicators for this competency is shown below. The five descriptors and the associated scale used to score a teacher's performance on this indicator are listed following the statement of the indicator.

Indicator: Provides feedback to learners throughout the lesson.

Scale of Descriptors

1. Accepts learner comments or performance without feedback about their adequacy.
2. Responds to negative aspects of student work, but few comments are made about positive aspects.
3. Informs students of the adequacy of their performance. Few errors pass by without being addressed.
4. Helps learners evaluate the adequacy of their own performance.
5. In addition to 4, the teacher probes for the source of misunderstandings which arise.

A complete classification of TPAI indicators for competencies of the TPM, CP, and IS instruments can be found in Appendix A.

The TPM indicators are rated independently by each data source after a review of a lesson plan portfolio containing written objectives, procedures, and materials. The CP and IS instrument indicators are rated by each data source after each has observed a teacher in the classroom setting for 40 to 50 minutes. Competency scores are computed by summing indicator ratings across data sources and computing a competency mean which can vary from 1.00 to 5.00.

The validity of the 1978-1979 edition of the TPAI has been investigated through a variety of research studies. Content validity was examined through a statewide experts' opinion study which verified the skills, their indicators and descriptors as essential for teaching (Johnson, Okey, Capie, Ellett, and Adams, 1978). Construct validity has been examined through a factor analysis of skills and indicators (Capie, Ellett, Okey, and Johnson, 1978) and by correlating TPAI assessments with other teacher observation instruments (Ellett, Johnson, Capie, and Okey, 1978). Criterion-related validity has been investigated by correlating elementary and secondary teachers' TPAI scores with a variety of criterion variables, such as pupil achievement on standardized and teacher-made tests (Okey, Capie, Ellett, and Johnson, 1978) and observations of student "on-task" behavior. Criterion-related validity was also investigated by correlating TPAI scores with measures of students' perceptions of characteristics of the school climate and learning environment (Ellett, Capie, Okey, and Johnson, 1978; Ellett, Capie, and Johnson, 1980).

Other studies include literature searches (Johnson, Capie, and Ellett, 1978), a study of legal implications of performance assessment of teachers (Johnson, Adams, Miller, Ellett, and Capie, 1978), and a study of the degree to which TPAI content is supported by sociological and psychological principles established by experts in education (Johnson, de la Serna, Capie, and Ellett, 1978).

Investigations of the reliability of preliminary editions of the TPAI have been conducted using videotaped and live teaching performances in the classroom. Studies of interrater agreement in both settings and internal consistency analyses provide evidence of the reliability of the TPAI and the assessment process. Classroom agreement rates on the order

of 85-90% have been reported. Alpha values in excess of .80 are most common (Capie, Ellett, and Johnson, 1979). Similarly, both long- and short-term temporal stability studies have been undertaken.

Teacher-Made Tests: All pupils in the study were administered Teacher-Made Tests (TMT) designed by participating teachers. The investigators met with groups of teachers and conducted workshops in the systematic development of classroom tests based on instructional unit objectives. All teachers were assisted in preparing 25-item, objective tests to measure pupil attainment of instructional unit objectives. The tests were designed to cover a ten-day to two-week unit of instruction selected by each teacher. Rules for test construction (e.g., difficulty level, item type, test length) were establisehd for all teachers. As a check on following established rules and the quality of test items, two of the investigators reviewed each individual TMT before it was prepared for administration to pupils. This helped assure congruence with research and instructional objectives and with the rules for test development established.

Data Collection

The TPAI were administered by each data source during the unit of instruction around which the TMTs had been developed. Arrangements for data collection were made between each teacher and data source such that teachers were observed while actually in the process of teaching material relevant to objectives from which the TMT was developed. If, for example, a teacher's test was in math, the teacher was observed by all data sources while teaching math. In following TPAI administration procedures, each data source assessed a teacher at different times during the instructional unit (independent observations).

Pupils were administered the TMTs developed for the unit on a pre- and post-test basis. The same TMT was used for both test administrations, though the order of test items was changed for the post-test. All data were collected during the late winter and early spring of 1979.

Data Analysis

Two types of data were available for each classroom. An instructional effectiveness (pupil performance) index was computed for TMT scores for each pupil. In addition, teacher performance scores were derived from ratings of the 46 indicators defining the 16 TPAI competencies. Pearson product-moment correlations were computed between the class mean of the instructional effectiveness (pupil TMT performance) and the mean of the TPAI indicator and competency ratings for the three data sources combined. In addition, the instructional effectiveness index was regressed in three separate analyses on the TPAI competencies within each instrument using stepwise, forward inclusion procedures.

The index of pupil performance on the TMT was a special index called the percentage of the possible gain from pre to post testing. This index was derived by dividing the actual gain (post-test score minus pre-test score) by the possible gain (total possible score minus the pre-test score) and multiplying by 100. The characteristics of this effectiveness index and other similar gain score indices have been discussed elsewhere (Safter, Tobin, and Capie, 1980). The generalizability coefficient computed on this index for these TMTs was .84 for differentiating teachers, and .94 for differentiating teachers and occasions.

## Results

Table 1 presents a summary of intercorrelations between TPM, CP, and IS indicator, competency, and total instrument ratings and pupil academic

TABLE 1

Summary of Intercorrelations Between Pupil Achievement Gains[1] and Teacher Performance as Assessed by the Teacher Performance Assessment Instruments (Spring, 1979) (N=56 Elementary and Secondary Teachers)[2]

| | | | Indicators | | | | | | Competencies | | | Total Instruments | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TPM | r | (P.) | CP | r | (P.) | IS | r | (P.) | C | r | (P.) | I | r | (P.) |
| 1. | .28 | (.019) | 1. | .33 | (.007) | 1. | .26 | (.026) | 1. | .31 | (.010) | TPM | .36 | (.003) |
| 2. | .37 | (.003) | 2. | .40 | (.001) | 2. | .15 | (.129)* | 2. | .32 | (.009) | CP | .45 | (.000) |
| 3. | .20 | (.072)* | 3. | .34 | (.005) | 3. | .36 | (.003) | 3. | .40 | (.001) | IS | .33 | (.007) |
| 4. | .31 | (.009) | 4. | .38 | (.002) | 4. | .42 | (.001) | 4. | .38 | (.002) | | | |
| 5. | .16 | (.116)* | 5. | .44 | (.000) | 5. | .20 | (.073)* | 5. | .32 | (.008) | | | |
| 6. | .35 | (.004) | 6. | .25 | (.032) | 6. | .19 | (.076)* | 6. | .43 | (.000) | | | |
| 7. | .26 | (.028) | 7. | .16 | (.117)* | 7. | .30 | (.012) | 7. | .31 | (.009) | | | |
| 8. | .26 | (.026) | 8. | .29 | (.014) | 8. | .15 | (.141)* | 8. | .23 | (.042) | | | |
| 9. | .37 | (.003) | 9. | .27 | (.021) | 9. | .23 | (.045) | 9. | .39 | (.001) | | | |
| 10. | .33 | (.007) | 10. | .33 | (.007) | | | | 10. | .15 | (.151)* | | | |
| 11. | .22 | (.053) | 11. | .44 | (.000) | | | | 11. | .23 | (.043) | | | |
| 12. | .22 | (.056)* | 12. | .32 | (.008) | | | | 12. | .37 | (.002) | | | |
| 13. | .32 | (.008) | 13. | .29 | (.016) | | | | 13. | .27 | (.023) | | | |
| 14. | .20 | (.073)* | 14. | .27 | (.022) | | | | 14. | .38 | (.002) | | | |
| 15. | .28 | (.017) | 15. | .25 | (.032) | | | | 15. | .30 | (.012) | | | |
| | | | 16. | -.00 | (.487)* | | | | 16 | .25 | (.029) | | | |
| | | | 17. | .30 | (.013) | | | | | | | | | |
| | | | 18. | .38 | (.002) | | | | | | | | | |
| | | | 19. | .37 | (.003) | | | | | | | | | |
| | | | 20. | .27 | (.023) | | | | | | | | | |
| | | | 21. | .17 | (.144)* | | | | | | | | | |
| | | | 22. | .13 | (.191)* | | | | | | | | | |

[1]Class means used as the units of statistical analysis. Index of Achievement Gain for each Pupil was:

$$\frac{\text{Post-Test Score} - \text{Pre-Test Score}}{\text{Total \# of Test Items} - \text{\# of Items Correct on Pre-Test}} \times 100$$

[2]Teacher-Made Tests of 25 items used to measure pupil achievement over two-week units of Instruction.

*Correlation not significantly different from zero ($p > .05$)

gains as measured by the TMTs. Indicator numbers for the TPM, CP, and IS instruments can be cross-referenced in numerical order with those in Appendix A. Competency numbers in Table 1 can be cross-referenced in numerical order with the list of 1978-1979 TPAI competencies in Appendix B.

By way of summary, 52 of a possible 65 simple correlations computed (80%) were statistically significant ($p < .05$). Values ranged from .00 to .45 with all significant correlations in the desired direction. The frequency and magnitude of significant correlations was generally greatest for the CP instrument, as expected. The largest percentage of non-significant indicator/TMT correlations was for the IS instrument.

TPAI competency/TMT correlations were generally greater in magnitude than TPAI indicator/TMT correlations, though these differences were not extremely large. All but one TPAI competency (#10, Adjusts instruction to changes in conditions) was significantly correlated with the pupil learning gain index. Total instrument/TMT correlations were .36 (TPM instrument); .45 (CP instrument); and .33 (IS instrument).

As regards individual indicator/TMT correlations, CP #5 (Provides directions and explanations when learners misunderstand) and CP #11 (Uses teaching methods appropriate for objectives and learners) were the strongest predictors of pupil learning gains ($r=.44$). The ten "best predicting" performance indicators ($r < .35$) reflect teacher performances such as explaining content clearly, selecting materials appropriate for learners, managing classroom routines efficiently, testing often, and demonstrating warmth and sensitivity to the needs and feelings of learners.

TPAI competencies with the strongest relationships with pupil learning gains reflected these same general characteristics of teacher

performance: (#3, Uses instructional techniques, methods, and media related to the objectives, r=.40); (#6, Demonstrates a repertoire of teaching methods, r=.43); (#9, Organizes time, space, materials and equipment for instruction, r=.39); (#4, Communicates with learners both orally and in writing, r=.48); (#14, Obtains and uses information about the needs and progress of individual learners, r=.38); and (#12, Helps learners develop positive concepts of themselves).

Three separate regression analyses were undertaken for each TPAI instrument using the TMT gain score index as a dependent variable. This procedure was an attempt to establish multiple correlation coefficients for examining the "incremental" predictive validity of the TPAI instruments. These analyses produced a multiple correlation of .50 for the CP instrument competencies and negligible increments beyond the highest simple competency/TMT values for the TPM and IS instruments. These regression coefficients were somewhat lower than desired, a finding possibly influenced by the rather high correlation between competencies (item interdependence).

## Discussion and Conclusions

The results reported in this paper, when combined with the methodology used, have several implications for process-product research studies and conceptions of "quality" teaching performance. The use of TMTs rather than standardized achievement measures as an index of pupil learning (or criterion of teacher effectiveness) produced significant predictive validity coefficients for the majority of TPAI performance indicators and competencies. While some of these coefficients were not as large as desired, they were, nonetheless, consistently in the desired direction, and approached

values considered to be interpretable as "educationally" significant (Gage, 1978).

The pupil learning gain score index used in this study has not been previously reported in the process-product research literature with the recent exception of a paper by Capie, Ellett, and Johnson (1980). A comparison of this index with more commonly used ones has been made in a recent paper by Safter, Tobin, and Capie (1980). The index seemingly offers exciting possibilities for research on teacher effects when pupil learning is used as a criterion of effectiveness because of ease of adaptation to teacher-made tests. Similarly, it seems a rather logical procedure to assess pupil learning gains on tests specifically related to each teacher's individual instructional objectives, rather than on a common standardized measure. Such a measure may or may not adequately reflect different teachers' learning objectives. Generalizability coefficients computed on the TMT gain index used in this study suggest its applicability to a wide variety of instructional settings, teachers, and pupils. Within certain parameters the index has the capability of being used with any teacher and subject matter, while maintaining high reliability.

One advantage of the pupil learning gain index used in this study is its adaptability to teacher effectiveness studies in which classroom tests of varying lengths are used. All teachers in this analysis assessed pupil progress with 25-item tests. However, the index can be used to proportionally equate learning gains when test lengths vary without the necessity of standardized score conversions.

In viewing the correlational results between the TPAI and pupil learning, it is interesting to note the predominance of teacher performances

centering on planning, instructing, and managing the classroom effectively. In a recent factor analysis of the TPAI (Tobin, Capie, Ellett, and Johnson, 1980) several of the CP instrument indicators loaded heavily on a factor labeled "classroom management." These same indicators which reflect efficiency of classroom organization were generally high correlates of pupil learning gain in the analyses reported here. Similarly, relatively high correlations for several other CP indicators emphasize the importance of planning in carrying out lesson objectives in the classroom. The importance of these teacher performances is somewhat further supported by the regression results with the CP competencies described above.

Another interesting result reported here is the validity of the TPM indicator and competency ratings. Methodologically, these data point to the predictive validity of interview data which is the basis for rating TPM items. The results suggest that this approach to gathering data regarding teacher performance characteristics can be validated against pupil learning outcomes. This finding, however, was more strongly corroborated by the correlations for TPM competencies than by those for TPM indicators.

The results of this study are important in at least two respects. In Georgia, the important finding is the evidence provided regarding the predictive validity of the TPAI. Virtually every indicator and competency was shown to be significantly related to mean achievement gain in the desired direction. Along with other validations of the TPAI, this study demonstrates the general quality of the TPAI for measuring a conception of "good" teaching.

More importantly for the larger educational community perhaps, is the picture of "good" teaching that emerges from these results. The pattern of

significant findings suggests that planning with specific objectives is an important teaching element related to pupil learning. The current ideas and findings expressed by Lomax and Cooley (1979), Rosenshine (1977), Anderson, Evertson, and Emmer (1979), and others about the importance of management of classroom procedures and allocation of time are generally supported here. Achievement occurs when tasks are clear and goal directed, when students have opportunities to actively participate, and when teachers keep students involved in learning activities.

Finally, some methodological implications should be noted. The utility of teacher-made tests in process-product research was demonstrated as was the use of a simplified learning gain index generalizable to a variety of grade levels and subject matter. The increased reliability of teacher performance assessments with multiple data sources was demonstrated to be an important aspect of documenting validity.

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APPENDIX A

Classification of TPAI Competencies and

Performance Indicators by Each Instrument

(TPM, CP, IS)

# Teaching Plans and Materials Instrument

PLANS INSTRUCTION TO ACHIEVE SELECTED OBJECTIVES.

1. Specifies or selects learner objectives for lessons.
2. Specifies or selects teaching procedures for lessons.
3. Specifies or selects content, materials, and media for lessons.
4. Specifies or selects materials and plans for assessing learners.
5. Plans instruction at a variety of cognitive levels.

ORGANIZES INSTRUCTION TO TAKE INTO ACCOUNT INDIVIDUAL DIFFERENCES AMONG LEARNERS.

6. Organizes instruction to take into account differences among learners in their capabilities.
7. Organizes instruction to take into account differences among learners in their learning styles.
8. Organizes instruction to take into account differences among learners in their rates of learning.

OBTAINS AND USES INFORMATION ABOUT THE NEEDS AND PROGRESS OF INDIVIDUAL LEARNERS.

9. Uses teacher-made or selected evaluation materials to obtain information about learner progress.
10. Communicates with individual learners about their needs and progress.

REFERS LEARNERS WITH SPECIAL PROBLEMS TO SPECIALISTS.

11. Obtains information about learners from standardized test results and cumulative records.
12. Identifies learners who require the assistance of specialists.
13. Obtains information about and assistance with specific learner problems from co-workers and parents.

OBTAINS AND USES INFORMATION ABOUT THE EFFECTIVENESS OF INSTRUCTION TO REVISE IT WHEN NECESSARY.

14. Obtains test results and teacher observation data on the effectiveness of instruction.
15. Uses evaluation results and observation data to make long term revisions in instruction when needed.

# Classroom Procedures Instrument

USES INSTRUCTIONAL TECHNIQUES, METHODS, AND MEDIA RELATED TO THE OBJECTIVES.

1. Uses audiovisual and other instructional equipment.
2. Uses instructional materials that provide appropriate practice on the objectives.
3. Organizes learning activities in a logical sequence.

COMMUNICATES WITH LEARNERS BOTH ORALLY AND IN WRITING.

4. Gives clear directions and explanations.
5. Provides directions and explanations when learners misunderstand.
6. Conveys the impression of knowing what to do and how to do it.
7. Uses acceptable written and oral expression with learners.

REINFORCES AND ENCOURAGES THE EFFORTS OF LEARNERS.

8. Uses responses and questions from learners in teaching.
9. Provides learners with opportunities for participating.

DEMONSTRATES A REPERTOIRE OF TEACHING METHODS.

10. Demonstrates ability to conduct lessons using a variety of teaching methods.
11. Uses teaching methods appropriate for objectives and learners.
12. Demonstrates ability to work with individuals, small groups, and large groups.

USES PROCEDURES WHICH INVOLVE THE LEARNER IN THE INSTRUCTION.

13. Uses procedures which initially get learners involved in lessons.
14. Maintains learner involvement in lessons.

DEMONSTRATES AN UNDERSTANDING OF THE SCHOOL SUBJECT BEING TAUGHT.

15. Demonstrates knowledge in the subject area.
16. Presents accurate information about the topic being taught.
17. Provides learners with information on the purpose and importance of topics.

ORGANIZES TIME, SPACE, MATERIALS, AND EQUIPMENT FOR INSTRUCTION.

18. Attends to routine tasks.
19. Organizes materials for efficient use by learners.
20. Provides a learning environment that is attractive and orderly.

ADJUSTS INSTRUCTION TO CHANGES IN CONDITIONS.

21. Uses special or unexpected events to supplement lessons.
22. Makes modifications in lessons as needed.

DEMONSTRATES ENTHUSIASM FOR TEACHING AND LEARNING AND THE SUBJECT BEING TAUGHT.

1. Communicates personal enthusiasm.

2. Communicates with learners in a way that conveys interest in them and in the subject.

HELPS LEARNERS DEVELOP POSITIVE CONCEPTS OF THEMSELVES

3. Demonstrates warmth and friendliness.

4. Demonstrates sensitivity to the needs and feelings of learners.

5. Demonstrates patience, empathy, and understanding.

MANAGES CLASSROOM INTERACTIONS

6. Provides feedback to learners about their behaviors.

7. Promotes comfortable interpersonal relationships.

8. Manages disruptive behavior among learners.

9. Maintains appropriate classroom behavior.

Appendix B

Competencies Comprising the 1978-1979 Teacher Performance Assessment Instruments

1. Plans instruction to achieve selected objectives. (TPM)
2. Organizes instruction to take into account individual differences among learners. (TPM)
3. Uses instructional techniques, methods, and media related to the objectives. (CP)
4. Communicates with learners both orally and in writing. (CP)
5. Reinforces and encourages the efforts of learners. (CP)
6. Demonstrates a repertoire of teaching methods. (CP)
7. Uses procedures which involve the learner in instruction. (CP)
8. Demonstrates an understanding of the school subject being taught. (CP)
9. Organizes time, space, materials, and equipment for instruction. (CP)
10. Adjusts instruction to changes in conditions. (CP)
11. Demonstrates enthusiasm for teaching and learning and the subject being taught. (IS)
12. Helps learners develop positive self concepts of themselves. (IS)
13. Manages classroom interactions. (IS)
14. Obtains and uses information about the needs and progress of individual learners. (TPM)
15. Refers learners with special problems to specialists. (TPM)
16. Obtains and uses information about the effectiveness of instruction to revise it when necessary (TPM)